

In the claims:

1. A layer 2 switch which conducts processing of terminating a layer 2 frame and processing of a layer 2 frame in which an expansion VLAN tag is stacked, comprising

a unit which, when a transmission destination area of said frame is different from a transmission source area, rewrites said expansion VLAN tag of said frame into an expansion VLAN tag of the transmission destination area.

2. The layer 2 switch as set forth in claim 1, comprising

a first table which stores header information of said frame and information indicates from which area said frame is received so as to correspond with each other.

3. The layer 2 switch as set forth in claim 2, wherein

said table includes a second table which stores information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to correspond with each other.

4. The layer 2 switch as set forth in claim 1, comprising:

a first table which stores header information of said frame and information indicates from which area said frame is received so as to correspond with each other,

said table including a second table which stores information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to correspond with each other, wherein

said first table is searched based on the header information of said frame and when the transmission destination area of said frame is different from the transmission source area, the expansion VLAN tag of the transmission destination area is obtained from said second table to rewrite the expansion VLAN tag of said frame.

5. The layer 2 switch as set forth in claim 1, wherein

said layer 2 frame is an Ethernet frame.

6. The layer 2 switch as set forth in claim 1, wherein

when a plurality of said expansion VLAN tags are applied to said layer 2 frame, an expansion VLAN tag at the top or all the expansion VLAN tags are rewritten by said expansion VLAN tag of said transmission destination area.

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7. The layer 2 switch as set forth in claim 3,
wherein

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information of said expansion VLAN tags of said
transmission source area and said transmission
destination area so as to one-to-one correspond with each
other is stored in said second table.

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8. The layer 2 switch as set forth in claim 1,
comprising
a unit for one-to-one connecting LANs which
handle said layer 2 frame to enable communication between
LANs having the layer 2 frames whose kinds are different.

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9. The layer 2 switch as set forth in claim 8,
wherein

information of said expansion VLAN tags of said
transmission source area and said transmission
destination area so as to one-to-one correspond with each
other is stored in said second table.

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10. The layer 2 switch as set forth in claim 1,
comprising

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a unit for one-to-N connecting LANs which handle
said layer 2 frame to enable communication between LANs
having said layer 2 frames whose kinds are different.

11. The layer 2 switch as set forth in claim 10,
wherein

information of said expansion VLAN tags of said
480 transmission source area and said transmission
destination area so as to one-to-N correspond with each
other is stored in said second table.

12. The layer 2 switch as set forth in claim 1,
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a unit for N-to-N connecting LANs which handle
said layer 2 frame to enable communication between LANs
having said layer 2 frames whose kinds are different.

490 13. The layer 2 switch as set forth in claim 12,
wherein

information of said expansion VLAN tags of said
transmission source area and said transmission
destination area so as to N-to-N correspond with each
495 other is stored in said second table.

14. A method of termination processing of a layer 2
frame and of processing an expansion VLAN tag of a layer
2 frame in which an expansion VLAN tag is stacked,
500 comprising the step of

rewriting, when a transmission destination area
of said frame is different from a transmission source
area, said expansion VLAN tag of said frame into an

expansion VLAN tag of the transmission destination area.

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15. The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, comprising:

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a first table which stores header information of said frame and information indicates from which area said frame is received so as to correspond with each other,

said table including a second table which stores information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to correspond with each other,

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wherein

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said first table is searched based on the header information of said frame and when the transmission destination area of said frame is different from the transmission source area, the expansion VLAN tag of the transmission destination area is obtained from said second table to rewrite the expansion VLAN tag of said frame.

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16. The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, wherein said layer 2 frame is an Ethernet frame.

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17. The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, wherein when a plurality of said expansion VLAN tags are

applied to said layer 2 frame, an expansion VLAN tag at the top or all the expansion VLAN tags are rewritten by said expansion VLAN tag of said transmission destination area.

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18. The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 15, wherein storing information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to one-to-one correspond with each other in said second table.

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19. The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, comprising a unit for one-to-one connecting LANs which handle said layer 2 frame to enable communication between LANs having the layer 2 frames whose kinds are different.

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20. The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 19, wherein storing information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to one-to-one correspond with each other in said second table.

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21. The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, comprising

560 a unit for one-to-N connecting LANs which handle
said layer 2 frame to enable communication between LANs
having said layer 2 frames whose kinds are different.

22. The method of processing an expansion VLAN tag of
a layer 2 frame as set forth in claim 21, wherein
 storing information of said expansion VLAN tags
565 of said transmission source area and said transmission
destination area so as to one-to-N correspond with each
other in said second table.

23. The method of processing an expansion VLAN tag of
570 a layer 2 frame as set forth in claim 14, comprising
 a unit for N-to-N connecting LANs which handle
said layer 2 frame to enable communication between LANs
having said layer 2 frames whose kinds are different.

575 24. The method of processing an expansion VLAN tag of
a layer 2 frame as set forth in claim 23, wherein
 storing information of said expansion VLAN tags
of said transmission source area and said transmission
destination area so as to N-to-N correspond with each
580 other in said second table.